### Remark

Development Engineering: Innovation and Technologies in the Global South

### Summary

This course teaches the fundamentals of technologies for development (Development Engineering) to design, pilot, and deploy appropriate, affordable and robust technologies to address sustainable development challenges and especially those related to extreme poverty in Low-income settings.

### Content

**Topics:**
- Introduction to Development Engineering
- What is poverty?
- Sustainable development in the context of Low- and Middle-Income Countries
- Essential Technologies
- Road to Impact
- Product Value Chain
- Sustainable Business Model Canvas
- Development-Humanitarian-Peace Nexus

### Keywords

Development engineering
Development, development engineering, developing countries, emerging countries, Global South, Low-and-Middle Income Countries (LMIC), poverty reduction, social entrepreneurship, technologies for development, sustainable impact, sustainable business models, value chain canvas, scale-up, Humanitarian-Peace-Development Nexus.

Learning Outcomes
By the end of the course, the student must be able to:
• Identify essential technologies and how they contribute to sustainable development
• Analyze affordable, sustainable, and socially acceptable technology solutions, for development
• Elaborate the interlinkages between development, humanitarian action and peace promotion.
• Carry out Development engineering projects in an interdisciplinary manner, i.e. integrating the contributions and expertise of different disciplines.
• Propose sustainable and socially responsible business solutions, adapted to the specific context of Low and middle-income countries.
• Characterize underlying causes and effects of extreme poverty, faced by emerging and developing countries.

Transversal skills
• Demonstrate the capacity for critical thinking
• Access and evaluate appropriate sources of information.
• Identify the different roles that are involved in well-functioning teams and assume different roles, including leadership roles.
• Give feedback (critique) in an appropriate fashion.

Teaching methods
Lectures (100% in English) flipped classroom, guest lectures, group work/presentation, recommended reading list.

Expected student activities
Homework, group work and presentation, mandatory watching of MOOC videos.

Assessment methods
During the semester
• Group work1: critical assessment of a technology (30%)
• Group work2: Entrepreneurial pitch presentation, plus written assignment. (40%)
• MCQ written exam (30%)

Supervision
Others
Teachers and teaching assistants will be available to guide students in their various group works.

Resources
Bibliography
The bibliography will be provided at the beginning of the course.

Moodle Link
• https://go.epfl.ch/ENV-470